

CLAIMS

What is claimed is:

- 1 1. A storage device for recording data, the data being divided into multiple blocks and
2 recorded on a recording medium, the storage device comprising:
3 an error detecting section for detecting a write error on the recording medium and
4 acquiring error information about the write error;
5 a recording position determining section for:
6 defining a block gap on the recording medium, the block gap having a length
7 determined by the error information about the write error, and
8 determining a recording position on the recording medium for a subsequent write
9 that is the block gap away from a last error free write operation; and
10 a block writing section for writing a subsequent block of data to the recording position on
11 the recording medium, wherein the length of the block gap provides both a no-write zone for
12 subsequent writes as well as a description of the write error.
- 1 2. The storage device according to Claim 1, wherein the recording medium is a magnetic
2 tape.
- 1 3. The storage device according to Claim 1, wherein the block gap is a length based on a
2 prime number.
- 1 4. The storage device according to Claim 3, wherein the recording position determining
2 section further defines multiple said block gaps, wherein a product of the prime numbers
3 indicates a maximum number of occurrences of a particular write error.
- 1 5. The storage device according to Claim 1, wherein the block gap is larger than a normal
2 storage space for one of the multiple blocks, such that a reading of a next block at a position that

3 is farther from a previously written prior block than the normal storage space indicates a
4 presence of the block gap, thus indicating a past write error.

1 6. The storage device according to Claim 1, further comprising:
2 an error information storing section for storing said error information in association with
3 the recording positions of said multiple blocks;
4 a block reading section for reading the multiple blocks from the recording medium;
5 a recording position acquiring section for acquiring the recording positions on the
6 recording medium where the respective blocks are recorded; and
7 an error information outputting section for selecting and outputting error information
8 associated with the recording positions from the error information storing section.

1 7. A method for recording data, the data being divided into multiple blocks and recorded on
2 a recording medium, the method comprising:
3 detecting a write error on the recording medium and acquiring error information about
4 the write error;
5 defining a block gap on the recording medium, the block gap having a length determined
6 by the error information about the write error;
7 determining a recording position on the recording medium for a subsequent write that is
8 the block gap away from a last error free write operation; and
9 writing a subsequent block of data to the recording position on the recording medium,
10 wherein the length of the block gap provides both a no-write zone for subsequent writes as well
11 as a description of the write error.

1 8. The method according to Claim 7, wherein the recording medium is a magnetic tape.

1 9. The method according to Claim 7, wherein the block gap is a length based on a prime
2 number.

1 10. The method according to Claim 9, further comprising defining multiple the block gaps,
2 wherein a product of the prime numbers indicates a maximum number of occurrences of a
3 particular write error.

1 11. The method according to Claim 7, wherein the block gap is larger than a normal storage
2 space for one of the multiple blocks, such that a reading of a next block at a position that is
3 farther from a previously written prior block than the normal storage space indicates a presence
4 of the block gap, thus indicating a past write error.

1 12. The method according to Claim 7, further comprising:
2 storing the error information in association with the recording positions of the multiple
3 blocks;
4 reading the multiple blocks from the recording medium;
5 acquiring the recording positions on the recording medium where the respective blocks
6 are recorded; and
7 selecting and outputting error information associated with the recording positions from
8 the error information storing section.

1 13. A computer program product, residing on a computer usable medium, for recording data,
2 the data being divided into multiple blocks and recorded on a recording medium, the computer
3 program product comprising:
4 program code for detecting a write error on the recording medium and acquiring error
5 information about the write error;
6 program code for defining a block gap on the recording medium, the block gap having a
7 length determined by the error information about the write error;
8 program code for determining a recording position on the recording medium for a
9 subsequent write that is the block gap away from a last error free write operation; and
10 program code for writing a subsequent block of data to the recording position on the
11 recording medium, wherein the length of the block gap provides both a no-write zone for
12 subsequent writes as well as a description of the write error.

1 14. The computer program product according to Claim 13, wherein the recording medium is
2 a magnetic tape.

1 15. The computer program product according to Claim 13, wherein the block gap is a length
2 based on a prime number.

1 16. The computer program product according to Claim 15, further comprising program code
2 for defining multiple the block gaps, wherein a product of the prime numbers indicates a
3 maximum number of occurrences of a particular write error.

1 17. The computer program product according to Claim 13, wherein the block gap is larger
2 than a normal storage space for one of the multiple blocks, such that a reading of a next block at
3 a position that is farther from a previously written prior block than the normal storage space
4 indicates a presence of the block gap, thus indicating a past write error.

1 18. The computer program product according to Claim 13, further comprising:
2 program code for storing the error information in association with the recording positions
3 of the multiple blocks;
4 program code for reading the multiple blocks from the recording medium;
5 program code for acquiring the recording positions on the recording medium where the
6 respective blocks are recorded; and
7 program code for selecting and outputting error information associated with the recording
8 positions from the error information storing section.